

Pétersbourg par divers Savans, et lus dans ses Assemblées. Tome premier; 1re, 2me, 3me, et 4me livraison. 4to.—*The Academy*.
Rapport sur un Voyage dans les Environs du Mont Elbrouz, dans le Caucase. Par M. Kupffer. 4to.—*The Academy*.
Astronomische Nachrichten. No. 177–193. 4to.—*Professor Schumacher, Foreign Member, R.S.*

A paper was read, entitled “Description of a Mountain Barometer, the column of which is divisible into two portions for safer and more convenient transport.” By Mr. Thomas Charles Robinson. Communicated by Captain Henry Kater, F.R.S.

The object of the contrivance described in this paper is to reduce the length of the barometer, when not in use, to one-half the usual length; and to render the position in which it may be carried indifferent. It consists of a glass tube eighteen inches long, cemented into a steel cistern two inches long, and one inch internal diameter, which is furnished with an internal screw, for receiving a hardened steel screw and hemisphere cemented to the end of a syphon tube. The long leg of this tube has an internal diameter of only the six or eight hundredths of an inch, and it is further contracted at the end to the twenty-fifth of an inch, so that no air can pass when the mercury is descending through it. The shorter leg of the syphon has the same bore as the tube.

When the two parts are screwed together, and the whole inverted, the mercury descends from the cistern, fills the long leg of the syphon, and ascends to a certain height in the shorter leg. Any air that may have existed in that part of the cistern which was not occupied by the mercury, is collected in an intermediate space, external to the column of mercury, and therefore can have no influence on the total height of that column, which is determined solely by the pressure of the external atmosphere. On gently reversing the position of the barometer, the mercury will repass from the syphon into the cistern, where it is confined by a stopper, as in a bottle: and may then be carried about in any position in perfect security.

The reading of a paper, entitled “An Account of further Experiments tried at Chatham, for the purpose of obtaining an artificial Water Cement,” by Brevet-Colonel C. W. Pasley, of the Corps of Royal Engineers, F.R.S. and Honorary Member of the Institution of Civil Engineers, was commenced.

The Society then adjourned over Easter to the 14th of April.

April 14.

HIS ROYAL HIGHNESS THE DUKE OF SUSSEX, K.G.,
President, in the Chair.

Joseph Hodgson, Esq. was elected a Fellow of the Society.

The following Presents were received, and thanks ordered for them :—

- Notice of the Proceedings of the Zoological Society. Feb. 22, 1831. 8vo.—*Presented by the Society.*
- The Philosophical Magazine and Annals of Philosophy. No. 52. 8vo.—*The Editors.*
- The Herschelian, or Companion to the Telescope. Part I. By James Holland. folio.—*The Author.*
- National Portrait Gallery. No. 24. 8vo.—*The Proprietors.*
- The Christian's Magazine. Part I. 8vo.—*The Editor.*
- A Concise View of the Origin, Constitution, and Proceedings of the Irish Society. 8vo.—*Henry Schultes, Esq.*
- The Rise, Progress, and present State of Public Opinion in Great Britain, and in other parts of the World. Second Edition. By W. A. Mackinnon, Esq. F.R.S. 8vo.—*The Author.*
- Meeting of the Cultivators of Natural Science and Medicine, at Hamburg, in September 1830. By James F.W. Johnston, M.A. 8vo.—*The Author.*
- An Experimental Inquiry into the Laws which regulate the Phenomena of Organic and Animal Life. By George Calvert Holland, M.D. 8vo.—*The Author.*
- The Physiology of the Fœtus, Liver, and Spleen. By the same. 8vo.—*The Author.*
- Ornithological Biography, or an Account of the Habits of the Birds of the United States of America: accompanied by Descriptions of the Objects represented in the Work, entitled, The Birds of America; and interspersed with Delineations of American Scenery and Manners. By John James Audubon, Esq. F.R.S. 8vo.—*The Author.*
- Almanaque Náutico y Efemérides Astronómicas para el Año de 1833, calculadas para el Observatorio Real de Marina de la Ciudad de S. Fernando. 8vo.—*His Majesty the King of Spain.*
- Sammlung der vom 8. May 1817 bis 31. December 1827 im k. k. Convikt-gebäude nächst dem Piaristenkollegium auf der Neustadt Prag Nro. C. 856, angestellten astronomischen, meteorologischen und physischen Beobachtungen von C. Hallaschka, Dr. der Phil. u. s. w. 4to.—*The Author.*
- Recherches sur l'Appareil Sternal des Oiseaux, considéré sous le double rapport de l'Ostéologie et de la Myologie; suivies d'un Essai contenant une distribution nouvelle de ces Vertèbres, basée sur la consideration de la Forme du Sternum et de ses Annexes. Par M. le Doct. L'Herminier. 2me Ed. 8vo.—*The Author.*

Colonel Pasley's paper was resumed and concluded.

The present paper is occupied with the detail of the experiments made by the author in the prosecution of the object of his former inquiry, already submitted to the Royal Society, into the best means of obtaining an artificial Water Cement. These experiments

were tried on a larger scale than the former, and were applied more especially to the practical purposes of building. He recommends that the cement should not be applied in two coats, the surfaces being less likely to adhere when this is done, than if the whole cement is applied at once. He succeeded in various ways, in forming cements which appeared to be the same, in all their properties, with natural cements: and he has now employed them in buildings on a scale sufficiently extensive, and in situations sufficiently exposed to the weather, to be brought to the test of experience in the course of time. Some experiments were also made by the author, with the view of forming an artificial lithographic stone, by a calcined mixture of chalk and carbonate of magnesia: but their density could not be rendered such as to answer the purpose intended.

On the whole he draws the general conclusion, that in all attempts to imitate the water cements of nature by artificial means, carbonate of lime must be the essential ingredient; next to which in point of importance are silica and alumina. The author succeeded in forming a very good cement by uniting these three ingredients. By the addition of a small proportion either of the protoxide of iron or of the oxides of lead, or of manganese, the qualities of the compound were very much improved; these latter ingredients appearing to produce a more intimate union of all of them, and a more speedy and permanent induration of the mass.

A paper was read, "On the Meteorological Observations made at the Apartments of the Royal Society, during the Years 1827, 1828, and 1829." By J. W. Lubbock, Esq. V.P. and Treasurer of the Royal Society.

The author first inquires into the annual and diurnal variations of the barometer and thermometer, for the determination of which he takes the mean of the observations in each month made at the Apartments of the Royal Society, during the years 1827, 1828, and 1829; and also that deduced from Mr. Bouvard's observations, published in the Memoirs of the French Academy of Sciences. From the table given it would appear that the annual variations are independent of the diurnal variations. A much greater number of observations than we possess at present, made frequently and at stated times each day, are requisite before any very satisfactory conclusion can be deduced as to the influence of the moon on the fluctuations of the barometer. The author, however, has attempted the inquiry, as far as the limited range of the present records will allow, by classifying all the observed heights, corresponding to a particular age of the moon, as defined by her transit taking place within a given half hour of the day; and thence deducing mean results, which are exhibited in tables.

The results afforded by the observations at Somerset House differ widely from those obtained from corresponding observations made at the Paris Observatory. According to the former, the barometer is highest at new and full moons, and lowest at the quadratures the extent of the fluctuations being 0.08 of an inch: ac-